7205, South Bend Community School

PROJECT ABSTRACT

Riley High School, South Bend, has 1389 students. Of these students, nearly 60% were designated free and reduced lunch in the 2008-09 School-year. ISTEP scores in math and language arts fell 14% points below the state average in the 2008-09 School-year. The achievement gap for students of color and English Language Learners is far more dramatic. Through use of this Learning Technologies Competitive Grant, Riley will improve standardized test scores, improve graduation rates, and will enhance the instructional quality of teachers and counselors through professional development. The proposal focuses specifically on improving student achievement in math and reading through technology. This grant will improve instructional quality and enhance school governance and leadership as students become self-directed learners. All students and staff at Riley will benefit from use and access to the innovative technologies and teaching models.

Riley High School has two specialized learning threads that would be enhanced with funds from the Learning Technologies Competitive Grant. The Technology and Engineering and the Early College programs at Riley High School are targeted for this grant proposal. Students in these programs will be working toward increasing scores in end of course assessments in Algebra, Biology and English 10 through use of project based, technology-enhanced programming. In addition to added technology, teachers and counselors working in these programs will receive graduate level coursework in problem-based teaching models provided by faculty of Indiana University South Bend.

The Technology and Engineering program offers students focus on very specific career pathways. Students who complete the four-year program will be better prepared to enter a post-secondary learning institution or to begin a career. Our graduates will be ready to meet the issues of a rapidly changing work world in both technology and engineering through rigorous, challenging coursework. Students who choose the Engineering strand will follow the curriculum of the Project Lead the Way (PLTW) program. As part of PLTW, students will utilize the hands-on Science, Technology, Engineering and Math (STEM) program called Gateway to Technology. Students who choose the Technology strand will have the opportunity to take courses in digital communication, computer applications, computer programming, radio/TV/broadcasting/telecommunications, and technology and communications processes. Students will have hands-on experience creating projects utilizing digital video and web design.

The Early College High School (ECHS) program students will engage in a relevant, rigorous and supportive learning environment in order to graduate with both a high school diploma and a minimum of 30 college credits. Students will be prepared for a successful transition to college to become

productive citizens and life-long learners. Students attending this program are students who are under-represented students in higher education (i.e., students of color, ELL). They are first in their families to go to college. They have not had access to the academic preparation needed to meet college readiness standards. These are students for whom the cost of college is prohibitive.

The combination of enhanced technology equipment and staff trained to work with problem-based teaching techniques will insure that students participating in these programs will be among the best prepared students in the nation in their career area. And, they will be on par with the most competitive countries in the world. Through a targeted multi-year staff development plan, our faculty will support a strategic project aimed at integrating rigorous academic standards and technology.

NEEDS/BASELINE

Riley High School has approximately 1389 students. In that the South Bend Community School Corporation allows students to choose their high school, the students at Riley reflect the rich diversity of ethnicity of our community. The ethnic breakdown is 49% Black; 31.6% White; 15.1% Hispanic; 3.7% Multi-racial; .3% American Indian; and .4% Asian.

Table 1: South Bend School Data Compared to State of Indiana Data (taken from the DOE web-site for results from the 2008-09 school year).

	SBCSC	STATE
% SENIORS TAKING SAT	45.0%	51.0%
PASS BOTH MATH AND ENGLISH ISTEP	47.0%	65.0%
GRADUATION RATE	62.5%	76.5%
POVERTY	23.0%	6.7%
FREE LUNCH	58.2%	31.9%

As can be seen on Table 1, the percentage of seniors who take the SAT is 6% lower than the state average. Graduation rate for South Bend Schools is 14% below the state average. And, the percentage of students passing both English and Math IStep tests is a full 14% below state average. Students of color

and English Language Learners in our school corporation have an even greater disparity below state averages.

Free lunch recipients comprise 58% of South Bend students, compared to 31.9% statewide. Free and reduced lunch for South Bend Schools is 68%. Poverty levels as determined by census numbers show South Bend with 23% poverty level, compared to 6.7% statewide. This data does not reflect the most recent recession numbers which would surely manifest greater free and reduced lunch numbers, as well as poverty statistics.

In addition to the obvious academic needs are the financial needs of the South Bend Community School Corporation. From January 1, 2008 to December 31, 2008 our school corporation had total revenue of $222,854,300.66 with total expenses of $291,752,821.69. With the recent recession hitting Northern Indiana quite significantly, we expect continued dwindling budgets. The need for additional funding and training in technology, especially in the STEM disciplines, is crucial. With decreased state property tax reductions, even further budget restrictions are expected for the 2010-11 school year. We are projecting greater reductions for 2011-2012.

We are committed to sustaining our Magnet School Technology program and continuing to develop our Early College Program. The additional resources will result in an increased graduation rate, with students more prepared for careers and continued education. For South Bend students to flourish, additional technology funding is needed.

GOALS/OBJECTIVES

Our goals align with the purpose of this grant, our school's goals and objectives, and the state's commitment to better prepare our students for careers and continued education beyond high school.

Listed below are five primary goals of this grant.

1. We will increase the graduation rate by 5% in the first year of funding. Reaching and surpassing the state's graduation rate is an incremental process. By year 2, we project another 5% increase in graduation rate. In year 3, graduation rates will meet or exceed state averages.

2. We will increase the use of student's technology in the classroom setting. Not only through equipment acquisition, but also training of teachers to use these tools for project-based learning, our students will be better prepared to generalize these skills to real work situations. All teachers will receive both equipment training and project-based teaching techniques.

3. The use of a problem-solving approach to teaching will generalize to real world situations. Learning core concepts is important, but being able to use these concepts in college and work settings is vital. In addition, students in the Early College program will obtain at least 30 and up to 60 college credits by the time they graduate from high school. This will allow them to enter college fully prepared for the rigors of college academic life. 90% of those entering the Early College program will graduate with a minimum of 30 college credits. These students will enter a post-secondary program to earn additional certification.

4. Training of teachers, social workers and administrative staff in the use of technology, and problem-solving will enhance the students' experiences. We expect to have active use of technology in all core areas, but most especially in the STEM disciplines. This will be evident through the use of the Project Lead the Way software and training that accompanies its purchase. Documented increase in the use of embedded technology of 20% in year 1, and an additional 10% in each of years 2 and 3.

5. Our last goal involves the increased number of seniors taking the SAT tests. Guidance directors and social workers will be an active part of the team in being trained to work individually with these students to be fully prepared to take the test. Beyond that, our corporation offers SAT training to all high school students. We will encourage students to take the test and apply for financial waivers for those students who are unable to pay for these tests. Increase participation in SAT taken by seniors by 10% in each of the years of the project.

As can be seen from these five goals, success is achievable within the grant¿s time frame. The funding afforded by this grant will help this process in increasing graduation rate and making our graduates successful, productive citizens of Indiana.

METHODS/ACTIVITIES

The addition of the Project Lead The Way course for the Technology and Engineering Magnet Program will increase the number of STEM focused classes that students can take at Riley High School. Students who elect Biotechnical Engineering will be engaged in rigorous and relevant project based learning which will emphasize the application of math and science skills. The Biotechnical Engineering projects will require students to solve problems from the fields of bio-technology, bio-engineering and bio-molecular engineering.

By purchasing the course curriculum from Project Lead The Way, students will not only have the textbooks and software for this course, but they will also have all the supplies necessary for all the project-based assignments. Our goal is to develop engineering skills in our students that will help them gain the competitive edge when applying for admission to engineering schools in Indiana. South Bend has been designated as an important emerging hub in nano-technology with the University of Notre Dame responsible for research, development and implementation and a facility on the southwest side of South Bend ready to manufacture the nano-tools and equipment that nano-research determines are needed. This new PLTW course helps our students become better prepared for this new engineering frontier and one step closer to this new technology and engineering to yet be developed.

Through an existing agreement with Ivy Tech Community College, students will be able to earn dual-credit for this course. This course, in addition, will help with the accomplishment of a school PL221, Goal 4, Mathematics Goal: Students will be able to demonstrate an understanding of algebraic concepts when applied to various problem-solving situations.

Riley Early College High School is a small school, in its first year of implementation, designed so that students who are first in their families to go to college, or who are under-represented in higher education, or for whom the cost of college is prohibitive. Students can earn both a high school diploma and up to two years of college credits. Given the challenges that these students have already been predisposed to, it is our educational challenge to ensure that what we teach is authentic, relevant and rigorous in order to prepare the students for a seamless transition to college. Our school focus in Riley Early College High School is to incorporate teaching strategies that meet two PL221 goals: Goal 3: Students demonstrate reading comprehension through the use of standard English in speaking and writing; and Goal 4: Students will be able to demonstrate an understanding of algebraic concepts when applied to various problem-solving situations.

The incorporation of the two carts of laptop computers with the Inspiration and Netop School6 software will greatly enhance cross-curricular integration of CORE subjects as well as more project-based assignments. The two carts of 32 computers will allow students in two different classrooms to be on one project based learning team. For example, two students from the World History classroom can work with their partners from the English 9 classroom comprising one team of four students working to solve their problem/project regarding the Odyssey. By using Netop Classroom6, the students will be able to communicate regarding their project and what their research suggests as they narrow possible solutions. This communication process will not only simulate the dialog students in college take part in but also it will also be much more efficient and possible for teachers to monitor the cooperation of teams and offer suggestions for keeping students on track, considering both the World History view of

the project as well as the English view of the project. Students will further use the computers to develop their Power point presentations for explaining the results of their project findings.

PROFESSIONAL DEVELOPMENT

Professional development will follow several paths:

Spring, 2010,Fall, 2010,Spring, 2011

We will establish a partnership with the School of Education at Indiana University South Bend (IUSB). Beginning in spring, 2010, a graduate course in the Problem-Solving Approach to Teaching and Learning will be offered on-site at Riley High School. The course will train 8 teachers/per semester for three semesters.

Fall, 2010, Spring, 2011,Fall, 2011

The faculty of IUSB will serve as mentors/coaches for the newly trained staff for one semester following the graduate training in the Problem-solving Approach.

Spring, 2011

Fall, 2011

After the semester of coaching, the teachers mentor/coach the new trained teachers who have received the problem-solving training. Thus we are ensuring sustainability of the staff in problem-based teaching methods. This is seen as the primary benefit of this training program both for new teachers and teachers who had been trained in the content-only model of teaching core disciplines.

Summer, 2010,Summer, 2011

The Research Experience for Teachers at Notre Dame (RET@ND) is a program of summer research projects for high school teachers from the Michiana region. The projects will be directed by faculty members from several academic departments in the Colleges of Engineering and Science at Notre Dame. Participating teachers will be encouraged to create new curricular modules for use in their classrooms. The projects cover a wide choice of mathematical, scientific, and technological topics. They vary in duration from 4 to 8 weeks and the stipends for participating teachers range from $1,500 to $6,200. The only prerequisite is experience teaching basic science in a discipline related to the project and a willingness to put in an energized effort. Funding for the RET program is generously provided by the College of Science at Notre Dame, the National Science Foundation and the Siemens Foundation.

Spring, 2010,Fall, 2010,Spring, 2011

Training in Smart board technology and academic use will be provided in each semester of the grant period for all participating teachers in both the Early College and the Technology and Engineering programs.

Summer, 2010

Current engineering teachers will attend the Project Lead The Way training this summer which is a requirement for teachers prior to the Project Lead The Way course being offered next year, 2010-2011, to students. The training at various regional university campuses will not only train the teachers in the presentation of the curriculum but it will also train the teachers on what projects to incorporate in the year long course. It also trains the teachers on how to develop their own projects which will emphasize science, technology, engineering and math skills that will help students apply what they have learned in other classes. The training also helps the teachers develop grading rubrics for projects as well as other pertinent assignments.

March 2010

Seminar/training in Inspiration software for Early College teachers will be held.

March 2010

Seminar/training in Netop School6 for Early College teachers will be completed.

Fall, 2010

Graduate education course, Differentiating Instruction is required for new teachers in the Early College High School program.

FORMATIVE/SUMMATIVE EVALUATION

The five goals and objectives will be measured using the following criteria.

1. We will increase the graduation rate by 5% in the first year of funding. Reaching and surpassing the state's graduation rate is an incremental process. By year 2, we project another 5% increase in graduation rate. In year 3, graduation rates will meet or exceed state averages.

Students¿ graduation rates will be documented by the Director of Research and Evaluation and compared against state averages as listed on the DOE website for School years, 2010, 2011 and 2012.

2. We will increase the use of student's technology in the classroom setting. Through not only equipment acquisition, but also training of teachers to use these tools for project based learning, our students will be better prepared to generalize these skills to real work situations.

This goal will be evaluated on two levels. Project Lead the Way and SmartEd services will conduct orientation and training sessions in the use of their products. IUSB will teach the techniques in using the programs to provide project based experiential learning to the students. The students will learn beyond content. They will become self-directed learners using problem/project based assignments to master concepts that will generalize into career settings.

3. The use of problem solving approach to teaching will generalize to real world situations. Learning core concepts is important, but being able to use these concepts in college and work settings is vital. In addition, students in the Early College Program will obtain at least 30 and up to 60 college credits by the time they graduate from high school. This will allow them to enter college fully prepared for the rigors of college academic life.

Data from the National Student Clearinghouse will be used to track student degree and enrollment verification in colleges following graduation. This will provide documentation that students who report intent to continue education have actually enrolled in secondary education programs. 90% of those entering the Early College program will graduate with a minimum of 30 college credits. These students will enter a post-secondary program to earn additional certification.

4. Training of teachers, social workers and administrative staff in not only use of technology, but also use of problem solving will enhance the students' experience. We expect to have active use of technology in all core areas, but most especially in the STEM disciplines. This will be evident through the use of the Project Lead the Way software and training that accompanies its purchase.

This goal will be measured by the number of teachers who have successfully completed both/either the graduate course work and/or the training offered by Project Lead the Way. Documented increase in the use of embedded technology of 20% in year 1, and an additional 10% in each of years 2 and 3.

5. Our last goal involves the increased number of seniors taking the SAT tests. Guidance directors and social workers will be an active part of the team in being trained to work individually with these students to be fully prepared to take the test. Beyond that, our corporation offers SAT training to all high school students. We will encourage students to take the test and apply for financial waivers for those students who are unable to pay for these tests.

This will be measured by documenting the percentage of students taking the SAT in their senior year compared to state averages as listed on the Department of Education website. Increase participation in SAT taken by seniors by 10% in each of the years of the project.

In addition to these measured goals, South Bend Community School Corporation will provide all required information to the DOE as determined by the grant and its timelines.

LOCAL MATCH

$60,000

The South Bend Community School Corporation has committed its resources to insure that these programs will flourish. All teachers and administrative support will be provided by the South Bend Community School Corporation. Transportation and facilities will be provided by the District. Technology support and maintenance will be provided throughout the grant and forward by the corporation's technology department. Engineering services and all necessary utilities and telephone services are provided as in-kind contributions to these programs. The corporation will employ additional teaching staff as the Early College Program expands in each year of operation.

The University of Notre Dame has donated $60,000 of Vernier probeware to the South Bend Community Schools. It will be available free of charge in a lending library that any South Bend math or science teacher may access. In addition, the Research Experience for Teachers at Notre Dame provides matching funds that can range anywhere between $1,500 and $6,000 per participating teacher.

Our goal with this grant is to use all funding to support needed technology and professional development to existing staff, as well as any additional staff, that will be needed to support our Early College and Technology and Engineering programs.

PARTNERSHIPS

In order to be successful, the South Bend Community School Corporation has engaged many partners. Listed below are partners and their engagement in the process.

1. The Research Experience for Teachers at Notre Dame (RET@ND) is a program of summer research projects for high school teachers of the Michiana region. The projects will be directed by faculty members from several academic departments in the Colleges of Engineering and Science at Notre Dame. Participating teachers will be encouraged to create new curricular modules for use in their classrooms. The projects cover a wide choice of mathematical, scientific, and technological topics. They vary in duration from 4 to 8 weeks and the stipends for participating teachers range from $1,500 to $6,200. The only prerequisite is experience teaching basic science in a discipline related to the project and a willingness to put in an energized effort. Funding for the RET program is generously provided by the College of Science at Notre Dame, the National Science Foundation and the Siemens Foundation.

2. Indiana University South Bend has designed a problem-solving approach to teaching and learning graduate course that will be conducted on site at our host school, Riley High School.

3. Ivy Tech Community College is the campus providing the college credits to our Early College Program's students. The South Bend School Corporation is in discussions regarding providing these courses on-site to alleviate any transportation issues.

4. The local Chamber of Commerce has been active in communicating to the school corporation about the needs of business and industry for our future graduates.

5. The University of Notre Dame, IUSB, and the South Bend Community School Corporation has developed a Teacher Quality Improvement committee to secure grants to further train new and existing school corporation teachers in inquiry-based teaching techniques. This committee meets monthly to explore, write, and submit funding applications to underwrite the cost of this training.

6. Indiana University Center for P-16 Research and Collaboration, Bloomington Campus, is working with South Bend Schools to put together an overall professional development plan which will be more far-reaching in years two and three. The plan will be expanded to include not only South Bend teachers, guidance directors, and social workers, but also parents, family members, and community.